Amendments to the Claims

The listing of claims will replace all prior versions, listings, of claims in the application.

Listing of Claims

1   1.   (Currently Amended) A translator <u>device</u> for insertion between a master and one or more

2   slave devices on a one-wire bus comprising:

3   a primary one-wire bus, said primary one-wire bus in digital electrical communication with

4   the master;

5   a secondary one-wire bus, said secondary one-wire bus in digital electronic communication

6   with the one or more slave devices; and

7   a data direction switch for directing the flow of data between said primary one-wire bus and

8   said secondary one-wire bus.

1   2.   (Currently Amended) The translator <u>device</u> of claim 1 wherein said secondary one-wire bus

2   is a first secondary one-wire bus and the translator further comprises a second secondary one-

3   wire bus.

1   3.   (Currently Amended) The translator <u>device</u> of claim 1 further comprising a command parser

2   for decoding a plurality of commands from the master.

1 4. (Currently Amended) The translator <u>device</u> of claim 3 further comprising data memory

2   wherein data stored in said memory is output on said primary bus in response to at least one

3   command of said plurality of commands.

1 5. (Currently Amended) An enhanced one-wire bus for the half duplex transmission of serial

2   data between a master and a slave comprising:

3   a translator having a primary interface and a secondary interface;

4   a primary one wire bus in electrical communication with said primary interface and with the

5   master;

6   a secondary one wire bus in electrical communication with said secondary interface and the

7   slave device,

8   wherein,

9   when said translator is in a first operational mode, said primary interface is in electrical

10   communication with said secondary interface such that serial data is communicated

11   from the master to the slave,

12   when said translator is in a second operational mode, said primary interface is in electrical

13   communication with said secondary interface such that serial data is communicated

14   from the slave to the master, and

15   when said translator is in a third operational mode, serial data <u>transmitted by the master</u> is

16   not communicated between the master and the slave.

1   6.   (Original) A method for inserting known data into a serial data stream between a master and

2   a slave device on a one-wire bus including the steps of:

3   (a)   providing a translator having a primary one-wire bus in electrical communication

4   with the master and a secondary one-wire bus in electrical communication with the

5   slave device, said translator providing interruptible communication between the

6   master and the slave device;

7   (b)   decoding a set of commands sent by the master on the primary one-wire bus;

8   (c)   in response to one or more commands of said set of commands, interrupting

9   communication between the master and the slave device; and

10   (d)   sending known serial data to either the master or the slave device.

1   7.   (Currently Amended) A method for inserting known data into a data stream between a

2   master and a slave device on a one-wire bus including the steps of:

3   (a)   providing a primary one-wire bus in electrical communication with the master;

4   (b)   providing a secondary one-wire bus in electrical communication with the slave;

5   (c)   waiting for a reset pulse on said primary one-wire bus;

6   (d)   receiving a ROM command on said primary one-wire bus;

7   (e)   determining if said ROM command is a read command, a match command, a search

8   command, or a skip command;

9   (f)   if said ROM command is a read command, performing the steps of:

10   (i)   transmitting a predetermined identifier on said primary one-wire bus; and

11   (ii)   returning to step (c)

12   (g)   if said ROM command is a match command performing the steps of:

13   (i)   receiving an identifier on said one-wire bus;

14   (ii)   comparing said received identifier to a predetermined identifier; and

15   (iii)   proceeding to step (j)

16   (h)   if said ROM command is a search command performing the steps of:

17   (i)   transmitting the first bit of a predetermined identifier having a plurality of

18   bits on said primary one-wire bus;

19   (ii)   transmitting the complement of said first bit of said predetermined identifier

20   on said primary one-wire bus;

21   (iii)   receiving a bit on said primary one-wire bus; and

22   (iv)   comparing said received bit to said first bit of said predetermined identifier;

23   (v)   repeating steps (h)(i) through (h)(iv) for each bit of said plurality of bits; and

24   (vi)   proceeding to step (j);

25   (i)   if said ROM command is a skip command proceeding to step (j);

26   (j)   receiving a memory command from said primary one-wire bus;

27   (k)   receiving a memory address from said primary one-wire bus;

28   (l)   if said memory command is a read command performing the steps of:

29   (i)   receiving slave data on said secondary one-wire bus;

30   (ii)   transmitting said slave data on said primary one-wire bus;

31   (iii)   repeating steps (l)(i) - (l)(ii) until a reset pulse is received on said primary

32   one-wire bus;

33   (iii)   returning to step (d);

34   (m)   if said memory command is a write command, performing the steps of:

35   (i)   receiving slave data on said primary one-wire bus;

36   (ii)   transmitting said slave data on said secondary one-wire bus;

37   (iii)   receiving verification data on said secondary one-wire bus;

38   (iv)   transmitting said verification data on said primary one-wire bus;

39   (v)   receiving a write pulse on said primary one-wire bus;

40   (vi)   transmitting a write pulse on said secondary one-wire bus;

41   (vii)   receiving said slave data on said secondary one-wire bus;

42   (viii)   transmitting said slave data on said primary one-wire bus;

43   (ix)   repeating steps (m)(i) - (m)(viii) until a reset pulse is received on said primary

44   one-wire bus;

45   (x)   returning to step (m)(d).

1   8.   (New) A translator device for insertion between a master and one or more slave devices on

2   a one-wire bus, thus dividing the one-wire bus into two one-wire buses, the translator device

3   comprising:

4   data memory;

5   a primary one-wire bus, said primary one-wire bus in digital electrical communication with

6   the master;

7   a secondary one-wire bus, said secondary one-wire bus in digital electronic communication

8   with the one or more slave devices; and

9   a data direction switch for alternatively directing the flow of data between said primary one-

10   wire bus and said secondary one-wire bus or between said primary one-wire bus and

11   said data memory.